

ON A NEW GENUS AND SPECIES OF SIPHONAPTERA FROM NYASALAND.

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The Entomological Research Committee has received from Zomba four specimens of a new species of flea which is related to the genera *Leptopsylla*, Roths. (1911; type *musculi*, Dugès, 1832) and *Palaeopsylla*, Wagn. (1902; type *minor*, Dale, 1878 = *gracilis*, Tasch., 1880) but differs so much from the species belonging to these genera that it requires a separate genus. The species is especially remarkable for the development of its head and buccal organs (fig. 1). The mandibles as well as the labrum are very broad, particularly the former, and closely resemble those of *Spilopsyllus cuniculi*, Dale (1878), and the SARCOPSYLLIDAE. This peculiar parallelism also obtains in the labial palpi, which show a reduction similar to that which occurs in the fleas mentioned, being but feebly chitinized and consisting of only three distinct segments. The size of the labrum and mandibles suggests that the species fixes itself to the host by means of these organs in the same way as *Spilopsyllus cuniculi*, i.e., more permanently than do the majority of fleas. The structure of the head bears out this surmise inasmuch as the buccal slit extends far upwards, the frons being short, which allows the piercing organs to assume an almost horizontal position when being driven into the skin of the host.

The new genus, which we propose to call *Chimaeropsylla*, gen. nov., is further characterised by the first segment of the mid tarsus being one-fourth shorter than the second, and the first of the hind tarsus as long as the second segment.

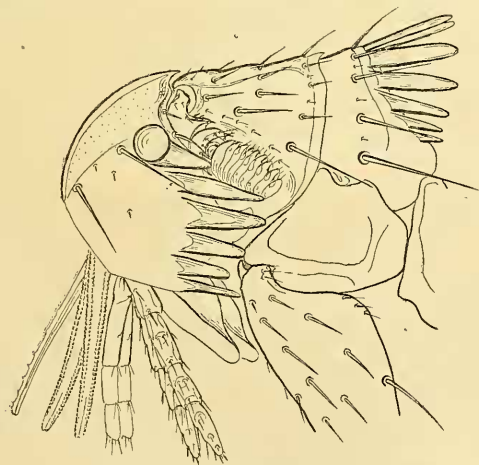


Fig. 1.—Head of *Chimaeropsylla potis* ♂.

Moreover, the abdomen is convex above in both sexes, being less slender than in *Leptopsylla* and *Palaeopsylla*. The stigmata are unusually large, especially that of the eighth abdominal segment. There is only one long antepygidial bristle on each side, accompanied by two minute hairs. The hind coxa bears a small comb on the inside. The short dorsal bristles of the tibiae do not form a regular comb as in *Leptopsylla musculi*. The fifth segment bears in all the tarsi four pairs of lateral bristles. There is a distinct eye at the base of the first genal spine.

***Chimaeropsylla potis*, sp. nov. (fig. 1).**

♂ ♀. A fairly dark brown species. The bristles are rather short and those placed on the head and thorax are approximately thicker than is usual in the allied fleas.

Head.—The frons is evenly rounded, more strongly in the ♂ than in the ♀, and is only a little longer than the oral edge, the frontal angle lying about midway between the antennal groove and the ventral spine of the genal comb. The sides of the frons are flat, this part of the head being strongly compressed. There is one long bristle near the frontal corner, a shorter one in front of the eye, and one more behind the eye, there being a number of additional small bristles as shewn in the figure. The genal comb is vertical and consists of 6 spines, of which the second and the last are pointed in the ♂, while all have rounded tips in the ♀. The dorsal wall of the occiput is very strongly chitinised, this incrassation extending well downwards along the antennal groove. The occiput bears three rows of stout bristles, there being also a row of 4 or 5 small bristles along the antennal groove. The first segment of the maxillary palpus is the largest, the measurements of the 4 segments being 15-14-10-14 in the ♂, and 16-15-11-13 in the ♀. The labial palpus is a little shorter than the maxillary palpus and consists of three segments. The long first segment shews near its centre a trace of a division into two, but there is no hair at this place, as is usually the case at the apices of the segments of labial palpi. The tip of the labial palpus is obliquely truncate as in *Pulex* and its allies, and bears three small bristles. The mandible is proximally as broad as the apex of the first segment of the maxillary palpus. The bristles of the second segment of the antenna are all short. The eye is black and glossy, and is placed at the base of the uppermost spine of the genal comb.

Thorax.—The pronotum is dorsally only half as long as ventrally. It bears a row of ten bristles on the two sides together, and a comb of 12 spines. The dorsal spines of the comb are nearly as long as the ventral portion of the pronotum, while the lateral spines are quite short. The mesonotum is shorter than the occiput, and bears a row of ten bristles on the two sides together, and in front of this row about 10 short ones, besides a number of short dorsal bristles. There are on each side of the mesonotum, on the inner surface before the apex, a ventral spine and a dorsal one. The mesopleura have five small bristles. The metanotum is about as long as the occiput, and has a median row of short bristles and a postmedian row of long ones, each row containing ten on the two sides together. The metepisternum and the metasternum bear each one stout bristle, while the epimerum has two rows (♂, 4 and 5; ♀, 5 or 6 and 6 or 7.)

Abdomen.—The abdominal tergites ii to v or vi have each a row of ten bristles on the two sides together, there being also a row of small bristles on the first segment of the ♂ and segments i to v of the ♀, the numbers of this anterior row being in the ♀, 7-5-5-3-2 on the two sides together. The first tergite, moreover, bears an apical comb of 7 short spines, the second segment having 2 spines in the ♂ and 3 in the ♀, the third and fourth none in the ♂, but 2 and 1 respectively in the ♀. The antepygial bristle is as long as the first hind tarsal segment. The sternites of segments iii to vii bear in the ♂ 2 bristles, the basal sternite having none, the numbers being 2 in the ♀ on the segments ii to v, 3 or 4 on vi, and 6 on segment vii.

Legs.—The comb of the hind coxa contains 7 or 8 spines placed in a row. The femora bear on the outside a single ventral bristle at some distance from the apex, and on the inside a smaller one nearer to the apex, the mid and hind femora not having any lateral bristles. The hind femur is remarkable for its shape, the ventral surface not being so strongly convex near the base as is the case in most fleas, but being thickest about its centre. The mid and hind femora have 7 dorsal notches, the first, second, fourth, and seventh (apical) notches bearing each a pair of bristles. There is a row of 8 lateral bristles on the hind tibia, and the longest dorsal apical bristle of this tibia is only half as long again as the tibia is broad; this bristle is stout and blunt, being less pointed and a little shorter than the longest ventral apical bristle. The bristles of the mid tarsus are short, the longest apical bristle of the first segment being only as long as the segment is broad. The longest bristle of the first segment of the hind tarsus is shorter than this segment, and the corresponding bristle of the second segment does not reach to the centre of the third segment. The most noteworthy feature of the tarsi is the shortness of the first segment in the mid and hind tarsi, the measurements of these tarsi being as follows:—

mid tarsus ♂, 14-19-13-7-20; ♀, 15-20-13-8-20.

hind tarsus ♂, 27-27-17-8-20; ♀, 30-29-17-9-22.

The four pairs of bristles of the fifth tarsal segment are lateral, the segment also bearing ventrally at the apex two short stout bristles, which are well separated from one another.

Modified segments.—♂. The eighth abdominal tergite is small, and the large stigma occupies the greater part of it. The eighth sternite is about as large as that of the seventh segment. It bears two or three bristles placed close together at the apical margin, the upper bristle being the largest. The clasper is elongate, its dorsal margin being excurved beyond the centre and then incurved, while the ventral margin is evenly and slightly excurved. A long bristle and a short one and two minute hairs are placed at the upper margin of the clasper, and four bristles at and below the apex, the upper one of them being the longest. The finger (fig. 2, F) is quite short. The manubrium (M) is long and slender. The ninth sternite has a broad vertical arm, which ends in a rather long point; the horizontal arm is constricted before the apex, and bears two apical bristles. The hind edge of the sensory plate of the ninth segment projects dorsally. The anal sternite bears on each side at the apex two long bristles and a shorter one. The clasping organs resemble those of *Leptopsylla aganippes*, Roths. (1904), to a certain extent, especially the clasper and finger.

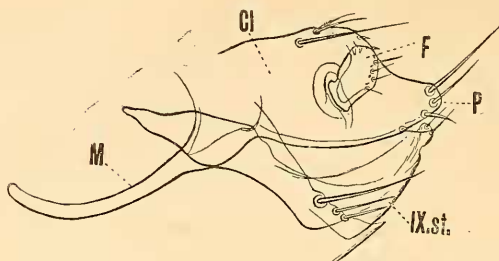


FIG. 2.—Clasping organs of *Ch. potis*, ♂. M., manubrium; Cl., clasper; F., finger; P., process of the clasper.

♀. The seventh sternite is ventrally truncate, and laterally produced into a short obtuse lobe (fig. 3). The eighth tergite has no bristles above and below

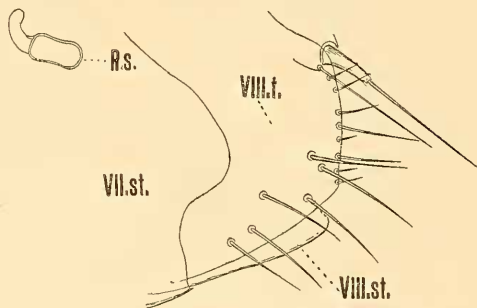


FIG. 3.—Abdominal segments VII. and VIII., and receptaculum seminis (R.s.) of *Ch. potis*, ♀.

the stigma, but bears about 6 bristles near the apical ventral margins on the outer surface, and about 9 at the apical edge. The stigma of this segment is as large as in the ♂. The eighth sternite is small, and has no bristles. The stylet is slender. The anal tergite bears dorsally on each side a long bristle which equals in length the apical bristle of the stylet. The receptaculum seminis is very small, the tail being of about the same length as the head, and the latter being thinnest centrally (fig. 3, R.s.).

Length, ♂ 1.5 mm., ♀ 1.9 mm.

One ♂ and three ♀♀ from Zomba, Nyassaland, taken by Dr. H. S. Stannus, in December, 1910, off the large elephant shrew, *Rhynchocyon cirnei*, Peters.